CLAIMS

What is claimed is:

1. A method comprising:

transmitting a first protocol data unit over an air interface, wherein the first protocol data unit includes

a first preamble, which enables a receiver to synchronize, and which is transmitted at a first modulation rate;

a first header, following the first preamble, which is transmitted at the first modulation rate; and

a first service data unit, following the first header, which is transmitted at a second modulation rate; and

transmitting a second protocol data unit over the air interface before expiration of an interframe space.

2. The method of claim 1, wherein transmitting the second protocol data unit begins approximately at a next symbol boundary after an end of transmitting the first protocol data unit.

3. The method of claim 1, wherein the second protocol data unit includes:

a second preamble, which is transmitted at the first modulation rate;

a second header, following the second preamble, which is transmitted at the first modulation rate; and

the second service data unit, following the second header, which is transmitted at a third modulation rate.

4. The method of claim 3, wherein the first preamble includes a full-length preamble, and wherein the second preamble includes a partial preamble.

5. The method of claim 4, wherein the first preamble consumes approximately two symbol widths, and wherein the second preamble consumes approximately one symbol width.

6. The method of claim 1, wherein the second protocol data unit includes:

a second header, which is transmitted at the first modulation rate; and

the second service data unit, following the second header, which is transmitted at a third modulation rate.

7. The method of claim 1, wherein the interframe space is a time period from a group of time periods including a short interframe space, a priority interframe space, a distributed interframe space, and an extended interframe space, as defined in an IEEE 802.11 Standard.

8. The method of claim 1, wherein the header includes a physical device header.

9. The method of claim 1, wherein the first modulation rate is in a range of approximately 6 to 12 megabits per second.

10. The method of claim 1, wherein the second modulation rate is in a range of approximately 6 to 240 megabits per second.

11. A method comprising:

receiving a first protocol data unit over an air interface, wherein the first protocol data unit includes

a first preamble, which enables a receiver to synchronize, and which is received at a first modulation rate;

a first header, following the first preamble, which is received at the first modulation rate; and

the first service data unit, following the first header, which is received at a second modulation rate; and

receiving a second protocol data unit over the air interface before expiration of an interframe space.

12. The method of claim 11, wherein the second protocol data unit includes:

a second preamble, which is received at the first modulation rate;

a second header, following the second preamble, which is received at the first modulation rate; and

the second service data unit, following the second header, which is received at a third modulation rate.

13. The method of claim 12, wherein the first preamble includes a full-length preamble, and wherein the second preamble includes a partial preamble.

14. The method of claim 13, wherein the first preamble consumes approximately two symbol widths, and wherein the second preamble consumes approximately one symbol width.

15. The method of claim 11, wherein the second protocol data unit includes:

a second header, which is received at the first modulation rate; and

the second service data unit, following the second header, which is received at a third modulation rate.

16. The method of claim 15, wherein the second header further includes a data integrity field, the method further comprising:

determining whether the second header is valid using information in the data integrity field; and

if the second header is not valid, evaluating at least one header-sized data segment subsequently received to attempt to find another possible header.

17. The method of claim 11, wherein the interframe space is a time period from a group of time periods including a short interframe space, a priority interframe space, a distributed interframe space, and an extended interframe space, as defined in an IEEE 802.11 Standard.

18. The method of claim 11, wherein the header includes a physical device header.

19. The method of claim 11, wherein the first modulation rate is in a range of approximately 6 to 12 megabits per second.

20. The method of claim 11, wherein the second modulation rate is in a range of approximately 6 to 240 megabits per second.

21. An apparatus comprising:

a medium access control device, which is operable to provide multiple data units destined for a receiver to a physical device; and

the physical device, coupled to the medium access control device, which is operable to

transmit a first protocol data unit over an air interface, wherein the first protocol data unit includes

a first preamble, to enable a receiver to synchronize, and which the physical device is to transmit at a first modulation rate;

a first header, following the first preamble, which the physical device is to transmit at the first modulation rate; and

the first service data unit, following the first header, which the physical device is to transmit at a second modulation rate; and

transmit a second protocol data unit over the air interface before expiration of an interframe space.

22. The apparatus of claim 21, wherein the physical device is further operable to transmit the second protocol data unit beginning approximately at a next symbol boundary after an end of transmitting the first protocol data unit.

23. The apparatus of claim 21, wherein the second protocol data unit includes:

a second preamble, which the physical device is to transmit at the first modulation rate;

a second header, following the second preamble, which the physical device is to transmit at the first modulation rate; and

the second service data unit, following the second header, which the physical device is to transmit at a third modulation rate.

24. The apparatus of claim 23, wherein the first preamble includes a full-length preamble, and wherein the second preamble includes a partial preamble.

25. The apparatus of claim 24, wherein the first preamble consumes approximately two symbol widths, and wherein the second preamble consumes approximately one symbol width.

26. The apparatus of claim 21, wherein the second protocol data unit includes:

a second header, which the physical device is to transmit at the first modulation rate; and

the second service data unit, following the second header, which the physical device is to transmit at a third modulation rate.

27. The apparatus of claim 21, wherein the interframe space is a time period from a group of time periods including a short interframe space, a priority interframe space, a distributed interframe space, and an extended interframe space, as defined in an IEEE 802.11 Standard.

28. The apparatus of claim 21, further comprising one or more antennae, coupled to the physical device, which are operable to provide an interface between the air interface and the physical device.

29. The apparatus of claim 21, further comprising an optical transmission device, coupled to the physical device, which is operable to provide an interface between the air interface and the physical device.

30. An apparatus comprising:

a medium access control device, which is operable to receive multiple data units from a physical device; and

the physical device, coupled to the medium access control device, which is operable to

receive a first protocol data unit over an air interface, wherein the first protocol data unit includes

a first preamble, to enable a receiver to synchronize, and which the physical device is to receive at a first modulation rate;

a first header, following the first preamble, which the physical device is to receive at the first modulation rate; and

the first service data unit, following the first header, which the physical device is to receive at a second modulation rate; and

receive a second protocol data unit over the air interface before expiration of an interframe space.

31. The apparatus of claim 30, wherein the second protocol data unit includes:

a second preamble, which the physical device is to receive at the first modulation rate;

a second header, following the second preamble, which the physical device is to receive at the first modulation rate; and

the second service data unit, following the second header, which the physical device is to receive at a third modulation rate.

32. The apparatus of claim 31, wherein the first preamble includes a full-length preamble, and wherein the second preamble includes a partial preamble.

33. The apparatus of claim 32, wherein the first preamble consumes approximately two symbol widths, and wherein the second preamble consumes approximately one symbol width.

34. The apparatus of claim 30, wherein the second protocol data unit includes:

a second header, which the physical device is to receive at the first modulation rate; and

the second service data unit, following the second header, which the physical device is to receive at a third modulation rate.

35. The apparatus of claim 34, wherein the second header further includes a data integrity field, and wherein the physical device is further operable to:

determine whether the second header is valid using information in the data integrity field; and

if the second header is not valid, evaluate at least one header-sized data segment subsequently received to attempt to find another possible header.

36. The apparatus of claim 30, wherein the interframe space is a time period from a group of time periods including a short interframe space, a priority interframe space, a distributed interframe space, and an extended interframe space, as defined in an IEEE 802.11 Standard.

37. The apparatus of claim 30, wherein the header includes a physical device header.

38. The apparatus of claim 30, further comprising one or more antennae, coupled to the physical device, which is operable to provide an interface between the air interface and the physical device.

39. The apparatus of claim 30, further comprising an optical transmission device, coupled to the physical device, which is operable to provide an interface between the air interface and the physical device.

40. A computer-readable medium having program instructions stored thereon to perform a method, which when executed within a wireless local area network device, result in:

transmitting a first protocol data unit over an air interface, wherein the first protocol data unit includes

a first preamble, which enables a receiver to synchronize, and which is transmitted at a first modulation rate;

a first header, following the first preamble, which is transmitted at the first modulation rate; and

the first service data unit, following the first header, which is transmitted at a second modulation rate; and

transmitting a second protocol data unit over the air interface before expiration of an interframe space.

41. The computer-readable medium of claim 40, wherein transmitting the second protocol data unit begins approximately at a next symbol boundary after an end of transmitting the first protocol data unit.

42. The computer-readable medium of claim 40, wherein the second protocol data unit includes:

a second preamble, which is transmitted at the first modulation rate;

a second header, following the second preamble, which is transmitted at the first modulation rate; and

the second service data unit, following the second header, which is transmitted at a third modulation rate.

43. The computer-readable medium of claim 42, wherein the first preamble includes a full-length preamble, and wherein the second preamble includes a partial preamble.

44. The computer-readable medium of claim 43, wherein the first preamble consumes approximately two symbol widths, and wherein the second preamble consumes approximately one symbol width.

45. The computer-readable medium of claim 40, wherein the second protocol data unit includes:

a second header, which is transmitted at the first modulation rate; and

the second service data unit, following the second header, which is transmitted at a third modulation rate.

46. A computer-readable medium having program instructions stored thereon to perform a method, which when executed within a wireless local area network device, result in:

receiving a first protocol data unit over an air interface, wherein the first protocol data unit includes

a first preamble, which enables a receiver to synchronize, and which is received at a first modulation rate;

a first header, following the first preamble, which is received at the first modulation rate; and

the first service data unit, following the first header, which is received at a second modulation rate; and

receiving a second protocol data unit over the air interface before expiration of an interframe space.

47. The computer-readable medium of claim 46, wherein the second protocol data unit includes:

a second preamble, which is received at the first modulation rate;

a second header, following the second preamble, which is received at the first modulation rate; and

the second service data unit, following the second header, which is received at a third modulation rate.

48. The computer-readable medium of claim 47, wherein the first preamble includes a full-length preamble, and wherein the second preamble includes a partial preamble.

49. The computer-readable medium of claim 48, wherein the first preamble consumes approximately two symbol widths, and wherein the second preamble consumes approximately one symbol width.

50. The computer-readable medium of claim 46, wherein the second protocol data unit includes:

a second header, which is received at the first modulation rate; and

the second service data unit, following the second header, which is received at a third modulation rate.

51. The computer-readable medium of claim 46, wherein the second header further includes a data integrity field, and executing the program instructions further results in:

determining whether the second header is valid using information in the data integrity field; and

if the second header is not valid, evaluating at least one header-sized data segment subsequently received to attempt to find another possible header.